

SEQUENCE LISTING

<110> VossHall, Leslie B.

The Trustees of Columbia University in the City of

<120> GENES ENCODING INSECT ODORANT RECEPTORS AND USES
THEREOF

<130> 0575/58715

<140> 09/257,706

<141> 1999-02-25

<160> 24

<170> PatentIn Ver. 2.0

<210> 1

<211> 553

<212> DNA

<213> Drosophila melanogaster DOR62

<400> 1

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<210> 2

<211> 153

<212> PRT

<213> Translation DOR62

<400> 2

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Arg Glu Ile Ile Gln Arg Val Leu Ser Val Pro Cys Met Ala Gln Phe
      20              25             30

Val Cys Ser Ala Ala Val Gln Cys Thr Val Ala Met His Phe Leu Tyr
      35              40             45
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Val Ala Asp Asp His Asp His Thr Ala Met Ile Ile Ser Ile Val Phe
50 55 60

Phe Ser Ala Val Thr Leu Glu Val Phe Val Ile Cys Tyr Phe Gly Asp
65 70 75 80

Arg Met Arg Thr Gln Ser Glu Ala Leu Cys Asp Ala Phe Tyr Asp Cys
85 90 95

Asn Trp Ile Glu Gln Leu Pro Lys Phe Lys Arg Glu Leu Leu Phe Thr
100 105 110

Leu Ala Arg Thr Gln Arg Pro Ser Leu Ile Tyr Ala Gly Asn Tyr Ile
115 120 125

Ala Leu Ser Leu Glu Thr Phe Glu Gln Val Met Arg Phe Thr Tyr Ser
130 135 140

Val Phe Thr Leu Leu Leu Arg Ala Lys
145 150

<210> 3

<211> 1493

<212> DNA

<213> *Drosophila melanogaster* DOR104

<400> 3

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<210> 4

<211> 467

<212> PRT

<213> Translation DOR104

<400> 4

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Asp Ile Ser Leu Asp Pro Ala Arg Glu Ser Asn Leu Phe Arg Leu Leu
 20 25 30

Met Gly Leu Gln Leu Ala Asn Gly Thr Lys Pro Ser Pro Arg Leu Pro
 35 40 45

Lys Trp Trp Pro Lys Arg Leu Glu Met Ile Gly Lys Val Leu Pro Lys
 50 55 60

Ala Tyr Cys Ser Met Val Ile Phe Thr Ser Leu His Leu Gly Val Leu
 65 70 75 80

Phe Thr Lys Thr Thr Leu Asp Val Leu Pro Thr Gly Glu Leu Gln Ala
 85 90 95

Ile Thr Asp Ala Leu Thr Met Thr Ile Ile Tyr Phe Phe Thr Gly Tyr
 100 105 110

Gly Thr Ile Tyr Trp Cys Leu Arg Ser Arg Arg Leu Leu Ala Tyr Met
 115 120 125

Glu His Met Asn Arg Glu Tyr Arg His His Ser Leu Ala Gly Val Thr
 130 135 140

Phe Val Ser Ser His Ala Ala Phe Arg Met Ser Arg Asn Phe Thr Val
 145 150 155 160

Val Trp Ile Met Ser Cys Leu Leu Gly Val Ile Ser Trp Gly Val Ser
 165 170 175

Pro Leu Met Leu Gly Ile Arg Met Leu Pro Leu Gln Cys Trp Tyr Pro
 180 185 190

Phe Asp Ala Leu Gly Pro Gly Thr Tyr Thr Ala Val Tyr Ala Thr Gln
 195 200 205
 Leu Phe Gly Gln Ile Met Val Gly Met Thr Phe Gly Phe Gly Gly Ser
 210 215 220
 Leu Phe Val Thr Leu Ser Leu Leu Leu Leu Gly Gln Phe Asp Val Leu
 225 230 235 240
 Tyr Cys Ser Leu Lys Asn Leu Asp Ala His Thr Lys Leu Leu Gly Gly
 245 250 255
 Glu Ser Val Asn Gly Leu Ser Ser Leu Gln Glu Glu Leu Leu Leu Gly
 260 265 270
 Asp Ser Lys Arg Glu Leu Asn Gln Tyr Val Leu Leu Gln Glu His Pro
 275 280 285
 Thr Asp Leu Leu Arg Leu Ser Ala Gly Arg Lys Cys Pro Asp Gln Gly
 290 295 300
 Asn Ala Phe His Asn Ala Leu Val Glu Cys Ile Arg Leu His Arg Phe
 305 310 315 320
 Ile Leu His Cys Ser Gln Glu Leu Glu Asn Leu Phe Ser Pro Tyr Cys
 325 330 335
 Leu Val Lys Ser Leu Gln Ile Thr Phe Gln Leu Cys Leu Leu Val Phe
 340 345 350
 Val Gly Val Ser Gly Thr Arg Glu Val Leu Arg Ile Val Asn Gln Leu
 355 360 365
 Gln Tyr Leu Gly Leu Thr Ile Phe Glu Leu Leu Met Phe Thr Tyr Cys
 370 375 380
 Gly Glu Leu Leu Ser Arg His Ser Ile Arg Ser Gly Asp Ala Phe Trp
 385 390 395 400
 Arg Gly Ala Trp Trp Lys His Ala His Phe Ile Arg Gln Asp Ile Leu
 405 410 415
 Ile Phe Leu Val Asn Ser Arg Arg Ala Val His Val Thr Ala Gly Lys
 420 425 430
 Phe Tyr Val Met Asp Val Asn Arg Leu Arg Ser Val Ile Thr Gln Ala
 435 440 445

Phe Ser Phe Leu Thr Leu Leu Gln Lys Leu Ala Ala Lys Lys Thr Glu
 450 455 460

Ser Glu Leu
 465

<210> 5
 <211> 1556
 <212> DNA
 <213> *Drosophila melanogaster* DOR87

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 gcaagttcgc ettcgtgctg ccggtgactg cgatgaatct gatgcagttc gtctacctgc 180
 tgcggtatgtg gggcgacctg cccgccttca ttctgaacat gttcttcttc tcggccattt 240
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 ccttcggcgt agctctacca ggagtgcgca tgaccagttc acccgctctac gaggttatct 540
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<210> 6
 <211> 376
 <212> PRT
 <213> Translation DOR87

<400> 6
 Met Thr Ile Glu Asp Ile Gly Leu Val Gly Ile Asn Val Arg Met Trp

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phe Ala Phe Val Leu Pro Val Thr Ala Met Asn Leu Met Gln Phe Val	35	40	45
Tyr Leu Leu Arg Met Trp Gly Asp Leu Pro Ala Phe Ile Leu Asn Met	50	55	60
phe Phe Phe Ser Ala Ile Phe Asn Ala Leu Met Arg Thr Trp Leu Val	65	70	75
Ile Ile Lys Arg Arg Gln Phe Glu Glu Phe Leu Gly Gln Leu Ala Thr	85	90	95
Leu Phe His Ser Ile Leu Asp Ser Thr Asp Glu Trp Gly Arg Gly Ile	100	105	110
Leu Arg Arg Ala Glu Arg Glu Ala Arg Asn Leu Ala Ile Leu Asn Leu	115	120	125
Ser Ala Ser Phe Leu Asp Ile Val Gly Ala Leu Val Ser Pro Leu Phe	130	135	140
Arg Glu Glu Arg Ala His Pro Phe Gly Val Ala Leu Pro Gly Val Ser	145	150	155
Met Thr Ser Ser Pro Val Tyr Glu Val Ile Tyr Leu Ala Gln Leu Pro	165	170	175
Thr Pro Leu Leu Leu Ser Met Met Tyr Met Pro Phe Val Ser Leu Phe	180	185	190
Ala Gly Leu Ala Ile Phe Gly Lys Ala Met Leu Gln Ile Leu Val His	195	200	205
Arg Leu Gly Gln Ile Gly Gly Glu Glu Gln Ser Glu Glu Glu Arg Phe	210	215	220
Gln Arg Leu Ala Ser Cys Ile Ala Tyr His Thr Gln Val Met Arg Tyr	225	230	235
Val Trp Gln Leu Asn Lys Leu Val Ala Asn Ile Val Ala Val Glu Ala	245	250	255
Ile Ile Phe Gly Ser Ile Ile Cys Ser Leu Leu Phe Cys Leu Asn Ile			

260

265

270

Ile Thr Ser Pro Thr Gln Val Ile Ser Ile Val Met Tyr Ile Leu Thr
275 280 285

Met Leu Tyr Val Leu Phe Thr Tyr Tyr Asn Arg Ala Asn Glu Ile Cys
290 295 300

Leu Glu Asn Asn Arg Val Ala Glu Ala Val Tyr Asn Val Pro Trp Tyr
305 310 315 320

Glu Ala Gly Thr Arg Phe Arg Lys Thr Leu Leu Ile Phe Leu Met Gln
325 330 335

Thr Gln His Pro Met Glu Ile Arg Val Gly Asn Val Tyr Pro Met Thr
340 345 350

Leu Ala Met Phe Gln Ser Leu Leu Asn Ala Ser Tyr Ser Tyr Phe Thr
355 360 365

Met Leu Arg Gly Val Thr Gly Lys
370 375

<210> 7

<211> 1305

<212> DNA

<213> *Drosophila melanogaster* DOR53

<400> 7

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gacgtgtcca tggagacgtt ccccttttgc tatttgtgca acatgattat cgatgactgc 960
caggaaatgt ccaattgcct ctttcaatcg gactggacct ctgccgatcg tcgctacaaa 1020
tccacttttg tatactttct tcacaatctt cagcaaccca ttactctcac ggctgggtgga 1080

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 tgctactatt atattatata ttatattata ttatatatat attatcttat attatatatt 1260
 gctgtaccct aataaatatt tagtaataaa aaaaaaaaaa aaaaa 1305

<210> 8

<211> 367

<212> PRT

<213> Translation DOR53

<400> 8

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Pro Tyr Lys Leu Trp Leu Ala Phe Val Asn Ile Val Met Leu Ile Leu
 20 25 30

Leu Pro Ile Ser Ile Ser Ile Glu Tyr Leu His Arg Phe Lys Thr Phe
 35 40 45

Ser Ala Gly Glu Phe Leu Ser Ser Leu Glu Ile Gly Val Asn Met Tyr
 50 55 60

Gly Ser Ser Phe Lys Cys Ala Phe Thr Leu Ile Gly Phe Lys Lys Arg
 65 70 75 80

Gln Glu Ala Lys Val Leu Leu Asp Gln Leu Asp Lys Arg Cys Leu Ser
 85 90 95

Asp Lys Glu Arg Ser Thr Val His Arg Tyr Val Ala Met Gly Asn Phe
 100 105 110

Phe Asp Ile Leu Tyr His Ile Phe Tyr Ser Thr Phe Val Val Met Asn
 115 120 125

Phe Pro Tyr Phe Leu Leu Glu Arg Arg His Ala Trp Arg Met Tyr Phe
 130 135 140

Pro Tyr Ile Asp Ser Asp Glu Gln Phe Tyr Ile Ser Ser Ile Ala Glu
 145 150 155 160

Cys Phe Leu Met Thr Glu Ala Ile Tyr Met Asp Leu Cys Thr Asp Val
 165 170 175

Cys Pro Leu Ile Ser Met Leu Met Ala Arg Cys His Ile Ser Leu Leu
 180 185 190

Lys Gln Arg Leu Arg Asn Leu Arg Ser Lys Pro Gly Arg Thr Glu Asp

195

200

205

Glu Tyr Leu Glu Glu Leu Thr Glu Cys Ile Arg Asp His Arg Leu Leu
210 215 220

Leu Asp Tyr Val Asp Ala Leu Arg Pro Val Phe Ser Gly Thr Ile Phe
225 230 235 240

Val Gln Phe Leu Leu Ile Gly Thr Val Leu Gly Leu Ser Met Ile Asn
245 250 255

Leu Met Phe Phe Ser Thr Phe Trp Thr Gly Val Ala Thr Cys Leu Phe
260 265 270

Met Phe Asp Val Ser Met Glu Thr Phe Pro Phe Cys Tyr Leu Cys Asn
275 280 285

Met Ile Ile Asp Asp Cys Gln Glu Met Ser Asn Cys Leu Phe Gln Ser
290 295 300

Asp Trp Thr Ser Ala Asp Arg Arg Tyr Lys Ser Thr Leu Val Tyr Phe
305 310 315 320

Leu His Asn Leu Gln Gln Pro Ile Thr Leu Thr Ala Gly Gly Val Phe
325 330 335

Pro Ile Ser Met Gln Thr Asn Leu Ala Met Val Lys Leu Ala Phe Ser
340 345 350

Val Val Thr Val Ile Lys Gln Phe Asn Leu Ala Glu Arg Phe Gln
355 360 365

<210> 9

<211> 1321

<212> DNA

<213> *Drosophila melanogaster* DOR67

<400> 9

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tcgccctggg aaacttttgc tatattttct atcacattgc gtacactagc tttttgattt 480
caaacttttt gtcatttata atgaagagaa tccatgcctg gcgcattgtac tttccctacg 540

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aataagttaa gatatgcaag ctctgctatt ataaacctac actcgagaaa atatttcttc 1260
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<210> 10
<211> 367
<212> PRT
<213> Translation DOR67

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<400> 10
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His Tyr Lys Leu Trp Ser Thr Phe Val Thr Leu Val Ile Phe Ile Leu
          20             25             30

Leu Pro Ile Ser Val Ser Val Glu Tyr Ile Gln Arg Phe Lys Thr Phe
          35             40             45

Ser Ala Gly Glu Phe Leu Ser Ser Ile Gln Ile Gly Val Asn Met Tyr
          50             55             60

Gly Ser Ser Phe Lys Ser Tyr Leu Thr Met Met Gly Tyr Lys Lys Arg
          65             70             75             80

Gln Glu Ala Lys Met Ser Leu Asp Glu Leu Asp Lys Arg Cys Val Cys
          85             90             95

Asp Glu Glu Arg Thr Ile Val His Arg His Val Ala Leu Gly Asn Phe
          100            105            110

Cys Tyr Ile Phe Tyr His Ile Ala Tyr Thr Ser Phe Leu Ile Ser Asn
          115            120            125

Phe Leu Ser Phe Ile Met Lys Arg Ile His Ala Trp Arg Met Tyr Phe
          130            135            140

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Pro Tyr Val Asp Pro Glu Lys Gln Phe Tyr Ile Ser Ser Ile Ala Glu
 145 150 155 160
 Val Ile Leu Arg Gly Trp Ala Val Phe Met Asp Leu Cys Thr Asp Val
 165 170 175
 Cys Pro Leu Ile Ser Met Val Ile Ala Arg Cys His Ile Thr Leu Leu
 180 185 190
 Lys Gln Arg Leu Arg Asn Leu Arg Ser Glu Pro Gly Arg Thr Glu Asp
 195 200 205
 Glu Tyr Leu Lys Glu Leu Ala Asp Cys Val Arg Asp His Arg Leu Ile
 210 215 220
 Leu Asp Tyr Val Asp Ala Leu Arg Ser Val Phe Ser Gly Thr Ile Phe
 225 230 235 240
 Val Gln Phe Leu Leu Ile Gly Ile Val Leu Gly Leu Ser Met Ile Asn
 245 250 255
 Ile Met Phe Phe Ser Thr Leu Ser Thr Gly Val Ala Val Val Leu Phe
 260 265 270
 Met Ser Cys Val Ser Met Gln Thr Phe Pro Phe Cys Tyr Leu Cys Asn
 275 280 285
 Met Ile Met Asp Asp Cys Gln Glu Met Ala Asp Ser Leu Phe Gln Ser
 290 295 300
 Asp Trp Thr Ser Ala Asp Arg Arg Tyr Lys Ser Thr Leu Val Tyr Phe
 305 310 315 320
 Leu His Asn Leu Gln Gln Pro Ile Ile Leu Thr Ala Gly Gly Val Phe
 325 330 335
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 340 345 350
 Val Val Thr Ile Val Lys Gln Phe Asn Leu Ala Glu Lys Phe Gln
 355 360 365

<210> 11

<211> 1308

<212> DNA

<213> *Drosophila melanogaster* DOR64

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ctaccactga acacgaacac gaatatttca aaagtaaaca cataatattc acaatagtgt 1260
atcactttaa taaaattttt ggttaccatg aaaaaaaaaa aaaaaaaaaa 1308

<210> 12

<211> 379

<212> PRT

<213> Translation DOR64

<400> 12

Met	Lys	Leu	Ser	Glu	Thr	Leu	Lys	Ile	Asp	Tyr	Phe	Arg	Val	Gln	Leu
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Asn	Ala	Trp	Arg	Ile	Cys	Gly	Ala	Leu	Asp	Leu	Ser	Glu	Gly	Arg	Tyr
			20					25					30		
Trp	Ser	Trp	Ser	Met	Leu	Leu	Cys	Ile	Leu	Val	Tyr	Leu	Pro	Thr	Pro
		35					40					45			
Met	Leu	Leu	Arg	Gly	Val	Tyr	Ser	Phe	Glu	Asp	Pro	Val	Glu	Asn	Asn
		50					55					60			
Phe	Ser	Leu	Ser	Leu	Thr	Val	Thr	Ser	Leu	Ser	Asn	Leu	Met	Lys	Phe
	65					70					75			80	
Cys	Met	Tyr	Val	Ala	Gln	Leu	Thr	Lys	Met	Val	Glu	Val	Gln	Ser	Leu
					85					90				95	

Ile Gly Gln Leu Asp Ala Arg Val Ser Gly Glu Ser Gln Ser Glu Arg
 100 105 110
 His Arg Asn Met Thr Glu His Leu Leu Arg Met Ser Lys Leu Phe Gln
 115 120 125
 Ile Thr Tyr Ala Val Val Phe Ile Ile Ala Ala Val Pro Phe Val Phe
 130 135 140
 Glu Thr Glu Leu Ser Leu Pro Met Pro Met Trp Phe Pro Phe Asp Trp
 145 150 155 160
 Lys Asn Ser Met Val Ala Tyr Ile Gly Ala Leu Val Phe Gln Glu Ile
 165 170 175
 Gly Tyr Val Phe Gln Ile Met Gln Cys Phe Ala Ala Asp Ser Phe Pro
 180 185 190
 Pro Leu Val Leu Tyr Leu Ile Ser Glu Gln Cys Gln Leu Leu Ile Leu
 195 200 205
 Arg Ile Ser Glu Ile Gly Tyr Gly Tyr Lys Thr Leu Glu Glu Asn Glu
 210 215 220
 Gln Asp Leu Val Asn Cys Ile Arg Asp Gln Asn Ala Leu Tyr Arg Leu
 225 230 235 240
 Leu Asp Val Thr Lys Ser Leu Val Ser Tyr Pro Met Met Val Gln Phe
 245 250 255
 Met Val Ile Gly Ile Asn Ile Ala Ile Thr Leu Phe Val Leu Ile Phe
 260 265 270
 Tyr Val Glu Thr Leu Tyr Asp Arg Ile Tyr Tyr Leu Cys Phe Leu Leu
 275 280 285
 Gly Ile Thr Val Gln Thr Tyr Pro Leu Cys Tyr Tyr Gly Thr Met Val
 290 295 300
 Gln Glu Ser Phe Ala Glu Leu His Tyr Ala Val Phe Cys Ser Asn Trp
 305 310 315 320
 Val Asp Gln Ser Ala Ser Tyr Arg Gly His Met Leu Ile Leu Ala Glu
 325 330 335
 Arg Thr Lys Arg Met Gln Leu Leu Leu Ala Gly Asn Leu Val Pro Ile
 340 345 350

His Leu Ser Thr Tyr Val Ala Cys Trp Lys Gly Ala Tyr Ser Phe Phe
 355 360 365

Thr Leu Met Ala Asp Arg Asp Gly Leu Gly Ser
 370 375

<210> 13
 <211> 1252
 <212> DNA
 <213> *Drosophila melanogaster* DOR71g

<400> 13
 atggtcatta tcgacagtct tagtttttat cgtccattct ggatctgcat gcgattgctg 60
 gtaccgactt tcttcaagga ttccctcacgt cctgtccagc tgtacgtggt gttgctgcac 120
 atcctgggtca ccttgtggtt tccactgcat ctgctgctgc atcttctgct acttccatct 180
 accgctgagt tctttaagaa cctgaccatg tctctgactt gtgtggcctg cagtctgaag 240
 catgtggccc acttgatca cttgccgcag attgtggaaa tcgaatcact gatcgagcaa 300
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 catgctaggc gctttacaag atgtctctat attagctttg gcatgatcta tgcgcttttc 420
 ctgttcggcg tcttcgttca ggttattagc ggaaattggg aacttctcta tccagcctat 480
 ttcccatctg acttgagag caatcgcttt ctccggcgag tagccttggg ctatcaggta 540
 ttcagcatgt tagttgaagg cttccagggg ctgggcaacg atacctatac cccactgacc 600
 ctatgccttc tggccggaca tgtccatttg tgggtccatac gaatgggtca actgggatac 660
 ttcgatgacg agacgggtgt gaatcatcag cgtttgctgg attacattga gcagcataaa 720
 ctcttggtgc ggtaagcttt gattaactaa cttttgacaa gaagtttatt cactttaact 780
 ggttccaaaa acgatgcact caatgtgcag attccacaac ctggtgagcc ggaccatcag 840
 cgaagtgcga ctggtgcagc tgggcggatg tggagccact ctgtgcatca ttgtctccta 900
 catgctcttc tttgtggcg acacaatctc gctgggtctac tacttgggtt tctttggagt 960
 ggtctgcgtg cagctcttcc ccagctgcta ttttgccagc gaagtagccg aggagttgga 1020
 acggctgccca tatgcgatct tctccagcag atggtacgat caatcgcggg atcatcgatt 1080
 cgatttgctc atctttacac aattaacact gggaaaccgg ggggtggatca tcaaggcagg 1140
 aggtcttacc gagctgaatt tgaatgcctt tttcgccacc ctgaagatgg cctattccct 1200
 ttttgcagtt gtggtgcggg caaagggtat atagagagtc tgtttaatta aa 1252

<210> 14
 <211> 384
 <212> PRT
 <213> Translation DOR71g

<400> 14
 Met Val Ile Ile Asp Ser Leu Ser Phe Tyr Arg Pro Phe Trp Ile Cys
 1 5 10 15

Met Arg Leu Leu Val Pro Thr Phe Phe Lys Asp Ser Ser Arg Pro Val
 20 25 30

Gln Leu Tyr Val Val Leu Leu His Ile Leu Val Thr Leu Trp Phe Pro

45

Leu Val Phe Phe Gly Val Val Cys Val Gln Leu Phe Pro Ser Cys Tyr

290

295

300

Phe Ala Ser Glu Val Ala Glu Glu Leu Glu Arg Leu Pro Tyr Ala Ile
305 310 315 320

Phe Ser Ser Arg Trp Tyr Asp Gln Ser Arg Asp His Arg Phe Asp Leu
325 330 335

Leu Ile Phe Thr Gln Leu Thr Leu Gly Asn Arg Gly Trp Ile Ile Lys
340 345 350

Ala Gly Gly Leu Ile Glu Leu Asn Leu Asn Ala Phe Phe Ala Thr Leu
355 360 365

Lys Met Ala Tyr Ser Leu Phe Ala Val Val Val Arg Ala Lys Gly Ile
370 375 380

<210> 15

<211> 1321

<212> DNA

<213> *Drosophila melanogaster* DOR72g

<400> 15

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tggcatcttt tgggcctgga aagcaatttc tttctgaatc gcttggtgga ttggtgatt 120
acaattttcg taaccatttg gtatccaatt cacctgattc tgggactgtt tatggaaaga 180
tctttggggg atgtctgcaa ggtctacca attacggcag catgcttttt cgccagcttt 240
aaattttatt gttttcgctt caagctatct gaaatttaaag aaatcgaaat attatttaa 300
gagctggatc agcgagcttt aagtcgagag gaatgcgagt ttttcaatca aaatcggaga 360
cgtgaggcga atttcatttg gaaaagtttc attgtggcct atggactgtc gaatatctcg 420
gctattgcat cagttctttt cggcgggtgga cataagctat tatatccgcg ctggtttcca 480
tacgatgtgc aggccacgga actaatattt tggctaagt taacatacca aattgccgga 540
gtaagtgttg ccatacttca gaatttggcc aatgattcct atccaccgat gacattttgc 600
gtggttgccg gtcagtgaag acttttggcg atgcgcttga gtagaattgg ccaagggtcca 660
gaggaaacaa tatacttaac cggaaagcaa ttaatcgaaa gcatcgagga tcaccgaaaa 720
ctaattgaagt aatgtacata tatagaatgg tttttagtta ttatcattaa atgaacgtgt 780
tgtaggaaaa ccattctgtt tgtcgggtgt cacggaaatc gatatttcctt aatttacata 840
tgatattaaa tacttccttg caaacaatta tcatattagt aatttagaat ctttattatt 900
tatttccaga atagtggaat tactgcgcag caccatgaat atttcgcagc tcggccagtt 960
tatttcaagt ggtgttaata ttccataac actagtcaac attctcttct ttgcggataa 1020
taatttcgct ataacctact acggagtgtt cttccctatc atggtgttgg aattattccc 1080
gtgctgctat tacggcaccg tgatatccgt ggagatgaac cagctgacct atgcgattta 1140
ctcaagtaac tggatgagta tgaatcggag ctacagccgc atccctactga tcttcatgca 1200
actcaccctg gcggaagtgc agatcaaggc cgggtgggatg attggcatcg gaatgaacgc 1260

cttcttttgcc accgtgcgat tggcctactc cttcttcact ttggccatgt cgctgcgtta 1320
a 1321

<210> 16
<211> 379
<212> PRT
<213> Translation DOR72g

<400> 16
Met Asp Leu Lys Pro Arg Val Ile Arg Ser Glu Asp Ile Tyr Arg Thr
1 5 10 15

Tyr Trp Leu Tyr Trp His Leu Leu Gly Leu Glu Ser Asn Phe Phe Leu
20 25 30

Asn Arg Leu Leu Asp Leu Val Ile Thr Ile Phe Val Thr Ile Trp Tyr
35 40 45

Pro Ile His Leu Ile Leu Gly Leu Phe Met Glu Arg Ser Leu Gly Asp
50 55 60

Val Cys Lys Gly Leu Pro Ile Thr Ala Ala Cys Phe Phe Ala Ser Phe
65 70 75 80

Lys Phe Ile Cys Phe Arg Phe Lys Leu Ser Glu Ile Lys Glu Ile Glu
85 90 95

Ile Leu Phe Lys Glu Leu Asp Gln Arg Ala Leu Ser Arg Glu Glu Cys
100 105 110

Glu Phe Phe Asn Gln Asn Thr Arg Arg Glu Ala Asn Phe Ile Trp Lys
115 120 125

Ser Phe Ile Val Ala Tyr Gly Leu Ser Asn Ile Ser Ala Ile Ala Ser
130 135 140

Val Leu Phe Gly Gly Gly His Lys Leu Leu Tyr Pro Ala Trp Phe Pro
145 150 155 160

Tyr Asp Val Gln Ala Thr Glu Leu Ile Phe Trp Leu Ser Val Thr Tyr
165 170 175

Gln Ile Ala Gly Val Ser Leu Ala Ile Leu Gln Asn Leu Ala Asn Asp
180 185 190

Ser Tyr Pro Pro Met Thr Phe Cys Val Val Ala Gly His Val Arg Leu
195 200 205

Leu Ala Met Arg Leu Ser Arg Ile Gly Gln Gly Pro Glu Glu Thr Ile
210 215 220

Tyr Leu Thr Gly Lys Gln Leu Ile Glu Ser Ile Glu Asp His Arg Lys
225 230 235 240

Leu Met Lys Ile Val Glu Leu Leu Arg Ser Thr Met Asn Ile Ser Gln
245 250 255

Leu Gly Gln Phe Ile Ser Ser Gly Val Asn Ile Ser Ile Thr Leu Val
260 265 270

Asn Ile Leu Phe Phe Ala Asp Asn Asn Phe Ala Ile Thr Tyr Tyr Gly
275 280 285

Val Tyr Phe Leu Ser Met Val Leu Glu Leu Phe Pro Cys Cys Tyr Tyr
290 295 300

Gly Thr Leu Ile Ser Val Glu Met Asn Gln Leu Thr Tyr Ala Ile Tyr
305 310 315 320

Ser Ser Asn Trp Met Ser Met Asn Arg Ser Tyr Ser Arg Ile Leu Leu
325 330 335

Ile Phe Met Gln Leu Thr Leu Ala Glu Val Gln Ile Lys Ala Gly Gly
340 345 350

Met Ile Gly Ile Gly Met Asn Ala Phe Phe Ala Thr Val Arg Leu Ala
355 360 365

Tyr Ser Phe Phe Thr Leu Ala Met Ser Leu Arg
370 375

<210> 17

<211> 1212

<212> DNA

<213> *Drosophila melanogaster* DOR73g

<400> 17

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cgacttcttg gagtcgaggg cgattatcct ttctgacggc tagtggattt tacaatcacg 120
tcctttcatta cgattttatt tcccggtgcat cttatactgg gaatgtataa aaagccccag 180
attcaagtct tcaggagtct gcatttcaca tcggaatgcc ttttctgcag ctataagttt 240
ttctgttttc gttggaaact taaagaaata aagaccatcg aaggattgct ccaggatctc 300
gatagtcgag ttgaaagtga agaagaacgc aactacttta atcaaaatcc aagtcgtgtg 360
gctcgaatgc ttctgaaaag ttacttggtg gctgctatat cggccataat cactgcaact 420
gtagctgggt tatttagtac tggtcgaaat ttaatgtatc tggggttggtt tccttacgat 480

cttcttttgcc accgtgcgat tggcctactc cttcttcact ttggccatgt cgctgcgtta 1320
a 1321

<210> 16

<211> 379

<212> PRT

<213> Translation DOR72g

<400> 16

Met Asp Leu Lys Pro Arg Val Ile Arg Ser Glu Asp Ile Tyr Arg Thr
1 . 5 10 15

Tyr Trp Leu Tyr Trp His Leu Leu Gly Leu Glu Ser Asn Phe Phe Leu
20 25 30

Asn Arg Leu Leu Asp Leu Val Ile Thr Ile Phe Val Thr Ile Trp Tyr
35 40 45

Pro Ile His Leu Ile Leu Gly Leu Phe Met Glu Arg Ser Leu Gly Asp
50 55 60

Val Cys Lys Gly Leu Pro Ile Thr Ala Ala Cys Phe Phe Ala Ser Phe
65 70 75 80

Lys Phe Ile Cys Phe Arg Phe Lys Leu Ser Glu Ile Lys Glu Ile Glu
85 90 95

Ile Leu Phe Lys Glu Leu Asp Gln Arg Ala Leu Ser Arg Glu Glu Cys
100 105 110

Glu Phe Phe Asn Gln Asn Thr Arg Arg Glu Ala Asn Phe Ile Trp Lys
115 120 125

Ser Phe Ile Val Ala Tyr Gly Leu Ser Asn Ile Ser Ala Ile Ala Ser
130 135 140

Val Leu Phe Gly Gly Gly His Lys Leu Leu Tyr Pro Ala Trp Phe Pro
145 150 155 160

Tyr Asp Val Gln Ala Thr Glu Leu Ile Phe Trp Leu Ser Val Thr Tyr
165 170 175

Gln Ile Ala Gly Val Ser Leu Ala Ile Leu Gln Asn Leu Ala Asn Asp
180 185 190

Ser Tyr Pro Pro Met Thr Phe Cys Val Val Ala Gly His Val Arg Leu
195 200 205

Leu Ala Met Arg Leu Ser Arg Ile Gly Gln Gly Pro Glu Glu Thr Ile
 210 215 220
 Tyr Leu Thr Gly Lys Gln Leu Ile Glu Ser Ile Glu Asp His Arg Lys
 225 230 235 240
 Leu Met Lys Ile Val Glu Leu Leu Arg Ser Thr Met Asn Ile Ser Gln
 245 250 255
 Leu Gly Gln Phe Ile Ser Ser Gly Val Asn Ile Ser Ile Thr Leu Val
 260 265 270
 Asn Ile Leu Phe Phe Ala Asp Asn Asn Phe Ala Ile Thr Tyr Tyr Gly
 275 280 285
 Val Tyr Phe Leu Ser Met Val Leu Glu Leu Phe Pro Cys Cys Tyr Tyr
 290 295 300
 Gly Thr Leu Ile Ser Val Glu Met Asn Gln Leu Thr Tyr Ala Ile Tyr
 305 310 315 320
 Ser Ser Asn Trp Met Ser Met Asn Arg Ser Tyr Ser Arg Ile Leu Leu
 325 330 335
 Ile Phe Met Gln Leu Thr Leu Ala Glu Val Gln Ile Lys Ala Gly Gly
 340 345 350
 Met Ile Gly Ile Gly Met Asn Ala Phe Phe Ala Thr Val Arg Leu Ala
 355 360 365
 Tyr Ser Phe Phe Thr Leu Ala Met Ser Leu Arg
 370 375

<210> 17

<211> 1212

<212> DNA

<213> *Drosophila melanogaster* DOR73g

<400> 17

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 cgacttctgg gagtcgaggg cgattatcct ttctgacggc tagtggattt tacaatcacg 120
 tctttcatta cgattttatt tcccgatcat cttatactgg gaatgtataa aaagccccag 180
 attcaagtct tcaggagtct gcatttcaca tcggaatgcc ttttctgcag ctataagttt 240
 ttctgttttc gttggaaact taaagaaata aagaccatcg aaggattgct ccaggatctc 300
 gatagtcgag ttgaaagtga agaagaacgc aactacttta atcaaaatcc aagtcgtgtg 360
 gctcgaatgc ttctgaaaag ttacttggtg gctgctatat cggccataat cactgcaact 420
 gtagctgggt tatttagtac tggtcgaaat ttaatgtatc tgggttggtt tccctacgat 480

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tttcaagcaa cgcgcgcaat ctattggatt agtttttctt atcaggcgat tggctctagt 540
ctgttgattc tggaaaatct ggccaacgat tcatatccgc cgattacatt ttgtgtggtc 600
tctggacatg tgagactatt gataatgcgt ttaagtcgaa ttggtcacga tgtaaaatta 660
tcaagttcgg aaaataccag aaaactcatc gaaggatatcc aggatcacag gaaactaatg 720
aagtaagaat aaagatttaa gaaccgcatg ttgtagagct cagagaactg ataattaatc 780
aaatgtaact tttccaggat aatacgcta cttcgagca ctttacatct tagccaactg 840
ggccagttcc tttctagtgg aatcaacatt tccataacac tcatcaacat cctgttcttt 900
gcggaataca actttgcaat gctttattat gcggtgttct ttgctgcaat gttaatagaa 960
ctattttcaa gttgttacta tggaattctg atgacaatgg agtttgataa gctaccatat 1020
gccatcttct ccagcaactg gcttaaaatg gataaaagat acaatcgatc cttgataatt 1080
ctgatgcaac taacactggg tccagtgaat ataaaagcag gtggtattgt tggcatcgat 1140
atgagtgcac tttttgccac agttcggatg gcatattcct tttacacttt agccttgtca 1200
tttcgagtat ag 1212

```

<210> 18

<211> 378

<212> PRT

<213> Translation DOR73g

<400> 18

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Met Asp Ser Arg Arg Lys Val Arg Ser Glu Asn Leu Tyr Lys Thr Tyr
  1              5              10              15

```

```

Trp Leu Tyr Trp Arg Leu Leu Gly Val Glu Gly Asp Tyr Pro Phe Arg
      20              25              30

```

```

Arg Leu Val Asp Phe Thr Ile Thr Ser Phe Ile Thr Ile Leu Phe Pro
      35              40              45

```

```

Val His Leu Ile Leu Gly Met Tyr Lys Lys Pro Gln Ile Gln Val Phe
      50              55              60

```

```

Arg Ser Leu His Phe Thr Ser Glu Cys Leu Phe Cys Ser Tyr Lys Phe
      65              70              75              80

```

```

Phe Cys Phe Arg Trp Lys Leu Lys Glu Ile Lys Thr Ile Glu Gly Leu
      85              90              95

```

```

Leu Gln Asp Leu Asp Ser Arg Val Glu Ser Glu Glu Glu Arg Asn Tyr
      100              105              110

```

```

Phe Asn Gln Asn Pro Ser Arg Val Ala Arg Met Leu Ser Lys Ser Tyr
      115              120              125

```

```

Leu Val Ala Ala Ile Ser Ala Ile Ile Thr Ala Thr Val Ala Gly Leu
      130              135              140

```

```

Phe Ser Thr Gly Arg Asn Leu Met Tyr Leu Gly Trp Phe Pro Tyr Asp

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145		150		155		160
Phe Gln Ala Thr Ala Ala Ile Tyr Trp Ile Ser Phe Ser Tyr Gln Ala						
	165		170		175	
Ile Gly Ser Ser Leu Leu Ile Leu Glu Asn Leu Ala Asn Asp Ser Tyr						
	180		185		190	
Pro Pro Ile Thr Phe Cys Val Val Ser Gly His Val Arg Leu Leu Ile						
	195		200		205	
Met Arg Leu Ser Arg Ile Gly His Asp Val Lys Leu Ser Ser Ser Glu						
	210		215		220	
Asn Thr Arg Lys Leu Ile Glu Gly Ile Gln Asp His Arg Lys Leu Met						
	225		230		235	240
Lys Ile Ile Arg Leu Leu Arg Ser Thr Leu His Leu Ser Gln Leu Gly						
	245		250		255	
Gln Phe Leu Ser Ser Gly Ile Asn Ile Ser Ile Thr Leu Ile Asn Ile						
	260		265		270	
Leu Phe Phe Ala Glu Asn Asn Phe Ala Met Leu Tyr Tyr Ala Val Phe						
	275		280		285	
Phe Ala Ala Met Leu Ile Glu Leu Phe Pro Ser Cys Tyr Tyr Gly Ile						
	290		295		300	
Leu Met Thr Met Glu Phe Asp Lys Leu Pro Tyr Ala Ile Phe Ser Ser						
	305		310		315	320
Asn Trp Leu Lys Met Asp Lys Arg Tyr Asn Arg Ser Leu Ile Ile Leu						
	325		330		335	
Met Gln Leu Thr Leu Val Pro Val Asn Ile Lys Ala Gly Gly Ile Val						
	340		345		350	
Gly Ile Asp Met Ser Ala Phe Phe Ala Thr Val Arg Met Ala Tyr Ser						
	355		360		365	
Phe Tyr Thr Leu Ala Leu Ser Phe Arg Val						
	370		375			

<210> 19
 <211> 1198
 <212> DNA

<213> Drosophila melanogaster DOR46

<400> 19

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tacttgggag tggctcattt tggggtcgag aactggaaga acctttacgt gttttacagc 120
attgtgtcga atctttctcgt gaccctgtgc taccctggtc acctgggaat atccctcttt 180
cgcaaccgca ccatcaccga ggacatccct aacctgacca cctttgcgac ctgcacagcc 240
tgttcgggtga agtgcctgct ctacgcctac aacatcaagg atgtgctgga gatggagcgg 300
ctggtgagggc ttttggtatga acgcgtcgtg ggtccggagc aacgcagcat ctacggacaa 360
gtgaggggtcc agctgcgaaa tgtgctatac gtgttcacat gcctctacat gccgtgtgcc 420
ctggttcggcg agctatcctt tctgttcaag gaggagcggc gtctgatgta tcccgctgg 480
tttcccttcg actgggtgca ctccaccagg aactattaca tagcgaacgc ctatcagata 540
gtgggcatct cgtttcagct gctgcaaaac tatgttagcg actgctttcc ggcgggtggg 600
ctgtgcctga tctcatccca catcaaatg ttgtacaaca gattcgagga ggtgggcctg 660
gatccagcca gagatgcgga gaaggacctg gaggcctgca tcaccgatca caagcatatt 720
ctagagtggg caggcgggctc attgtaacgt tctgtttcta ttcactttcc aacttttttc 780
cagactattc cgacgcctcg aggccttcat tccctgccc atgctaattc agttcacagt 840
gaccgccttg aatgtgtgca tgggttagc agccctggtg ttttctgca gcgagcccat 900
ggcagggatg tacttcatct tctactccct ggccatgccg ctgcagatct ttccgtcctg 960
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caattggcac acacagaaca ggagctttaa gcggaaaatg atgctgttcg ttgagcaatc 1080
gttgaagaag agcaccgctg tggctggcgg aatgatgcgt atccacctgg acacgttctt 1140
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<210> 20

<211> 379

<212> PRT

<213> Translation DOR46

<400> 20

Met Ala Glu Val Arg Val Asp Ser Leu Glu Phe Phe Lys Ser His Trp
1 5 10 15

Thr Ala Trp Arg Tyr Leu Gly Val Ala His Phe Arg Val Glu Asn Trp
20 25 30

Lys Asn Leu Tyr Val Phe Tyr Ser Ile Val Ser Asn Leu Leu Val Thr
35 40 45

Leu Cys Tyr Pro Val His Leu Gly Ile Ser Leu Phe Arg Asn Arg Thr
50 55 60

Ile Thr Glu Asp Ile Leu Asn Leu Thr Thr Phe Ala Thr Cys Thr Ala
65 70 75 80

Cys Ser Val Lys Cys Leu Leu Tyr Ala Tyr Asn Ile Lys Asp Val Leu
85 90 95

Glu Met Glu Arg Leu Leu Arg Leu Leu Asp Glu Arg Val Val Gly Pro
 100 105 110
 Glu Gln Arg Ser Ile Tyr Gly Gln Val Arg Val Gln Leu Arg Asn Val
 115 120 125
 Leu Tyr Val Phe Ile Gly Ile Tyr Met Pro Cys Ala Leu Phe Ala Glu
 130 135 140
 Leu Ser Phe Leu Phe Lys Glu Glu Arg Gly Leu Met Tyr Pro Ala Trp
 145 150 155 160
 Phe Pro Phe Asp Trp Leu His Ser Thr Arg Asn Tyr Tyr Ile Ala Asn
 165 170 175
 Ala Tyr Gln Ile Val Gly Ile Ser Phe Gln Leu Leu Gln Asn Tyr Val
 180 185 190
 Ser Asp Cys Phe Pro Ala Val Val Leu Cys Leu Ile Ser Ser His Ile
 195 200 205
 Lys Met Leu Tyr Asn Arg Phe Glu Glu Val Gly Leu Asp Pro Ala Arg
 210 215 220
 Asp Ala Glu Lys Asp Leu Glu Ala Cys Ile Thr Asp His Lys His Ile
 225 230 235 240
 Leu Glu Leu Phe Arg Arg Ile Glu Ala Phe Ile Ser Leu Pro Met Leu
 245 250 255
 Ile Gln Phe Thr Val Thr Ala Leu Asn Val Cys Ile Gly Leu Ala Ala
 260 265 270
 Leu Val Phe Phe Val Ser Glu Pro Met Ala Arg Met Tyr Phe Ile Phe
 275 280 285
 Tyr Ser Leu Ala Met Pro Leu Gln Ile Phe Pro Ser Cys Phe Phe Gly
 290 295 300
 Thr Asp Asn Glu Tyr Trp Phe Gly Arg Leu His Tyr Ala Ala Phe Ser
 305 310 315 320
 Cys Asn Trp His Thr Gln Asn Arg Ser Phe Lys Arg Lys Met Met Leu
 325 330 335
 Phe Val Glu Gln Ser Leu Lys Lys Ser Thr Ala Val Ala Gly Gly Met
 340 345 350

Met Arg Ile His Leu Asp Thr Phe Phe Ser Thr Leu Lys Gly Ala Tyr
 355 360 365

Ser Leu Phe Thr Ile Ile Ile Arg Met Arg Lys
 370 375

<210> 21
 <211> 1293
 <212> DNA
 <213> *Drosophila melanogaster* DOR19g

<400> 21
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 cagctcccca cttggggcgc agaccaccag cgtcgttttc agtccatgag gtttggtctc 120
 atcctgggtca tctgtttcat catgctgctg cttttctcct tcgaaatgtt gaacaacatt 180
 tcccaagtta gggagatcct aaagggtattc ttcatgttcg ccacggaaat atcctgcatg 240
 gccaaattat tgcatttgaa gttgaagagc cgcaaactcg ctggccttggg tgaatgcgatg 300
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Phe Gln Ser Met Arg Phe Gly phe Ile Leu Val Ile Leu Phe Ile Met
 35 40 45
 Leu Leu Leu Phe Ser Phe Glu Met Leu Asn Asn Ile Ser Gln Val Arg
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 Glu Ile Leu Lys Val Phe Phe Met Phe Ala Thr Glu Ile Ser Cys Met
 65 70 75 80
 Ala Lys Leu Leu His Leu Lys Leu Lys Ser Arg Lys Leu Ala Gly Leu
 85 90 95
 Val Asp Ala Met Leu Ser Pro Glu Phe Gly Val Lys Ser Glu Gln Glu
 100 105 110
 Met Gln Met Leu Glu Leu Asp Arg Val Ala Val Val Arg Met Arg Asn
 115 120 125
 Ser Tyr Gly Ile Met Ser Leu Gly Ala Ala Ser Leu Ile Leu Ile Val
 130 135 140
 Pro Cys Phe Asp Asn Phe Gly Glu Leu Pro Leu Ala Met Leu Glu Val
 145 150 155 160
 Cys Ser Ile Glu Gly Trp Ile Cys Tyr Trp Ser Gln Tyr Leu Phe His
 165 170 175
 Ser Ile Cys Leu Leu Pro Thr Cys Val Leu Asn Ile Thr Tyr Asp Ser
 180 185 190
 Val Ala Tyr Ser Leu Leu Cys Phe Leu Lys Val Gln Leu Gln Met Leu
 195 200 205
 Val Leu Arg Leu Glu Lys Leu Gly Pro Val Ile Glu Pro Gln Asp Asn
 210 215 220
 Glu Lys Ile Ala Met Glu Leu Arg Glu Cys Ala Ala Tyr Tyr Asn Arg
 225 230 235 240
 Ile Val Arg Phe Lys Asp Leu Val Glu Leu Phe Ile Lys Gly Pro Gly
 245 250 255
 Ser Val Gln Leu Met Cys Ser Val Leu Val Leu Val Ser Asn Leu Tyr
 260 265 270
 Asp Met Ser Thr Met Ser Ile Ala Asn Gly Asp Ala Ile Phe Met Leu
 275 280 285

Lys Thr Cys Ile Tyr Gln Leu Val Met Leu Trp Gln Ile Phe Ile Ile
 290 295 300
 Cys Tyr Ala Ser Asn Glu Val Thr Val Gln Ser Ser Arg Leu Cys His
 305 310 315 320
 Ser Ile Tyr Ser Ser Gln Trp Thr Gly Trp Asn Arg Ala Asn Arg Arg
 325 330 335
 Ile Val Leu Leu Met Met Gln Arg Phe Asn Ser Pro Met Leu Leu Ser
 340 345 350
 Thr Phe Asn Pro Thr Phe Ala Phe Ser Leu Glu Ala Phe Gly Ser Val
 355 360 365
 Gly Gln Gln Lys Phe Leu Tyr Ile Ser Phe Ile Thr Gly Tyr Ala Leu
 370 375 380
 Leu Leu Ser Asp Arg Gln Leu Leu Leu Gln Leu Leu Arg Thr Ala Glu
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 Ala Arg Gln Gln Leu Asn Phe Glu Thr Pro Gln His Leu Lys Ile Phe
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 Lys Pro Ile Phe Lys Ser Thr Gln Asn Val Met His Val His
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<210> 23

<211> 2075

<212> DNA

<213> *Drosophila melanogaster* DOR24g

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<210> 24

<211> 383

<212> PRT

<213> *Drosophila melanogaster* DOR24g

<400> 24

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Met	Asp	Tyr	Pro	Asp	Glu	Arg	Ala	Thr	Ala	Tyr	Ser	Asn	Glu	Ser	Ser
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Glu	Trp	Asp	Phe	Phe	Glu	Phe	Trp	Arg	Gln	Val	Phe	Gly	Leu	Phe	Leu
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Gln	Val	Gln	Lys	Ser	Thr	Ile	Ala	Leu	Leu	Gly	Phe	Asp	Leu	Phe	Ser
				65			70			75				80	

Glu	Asn	Arg	Glu	Met	Trp	Lys	Arg	Pro	Tyr	Arg	Ala	Met	Asn	Val	Phe
				85				90					95		

Ser	Ile	Ala	Ala	Ile	Phe	Pro	Phe	Ile	Leu	Ala	Ala	Val	Leu	His	Asn
				100				105					110		

Trp Lys Asn Val Leu Leu Leu Ala Asp Ala Met Val Ala Leu Leu Ile
 115 120 125

Thr Ile Leu Gly Leu Phe Lys Phe Ser Met Ile Leu Tyr Leu Arg Arg
 130 135 140

Asp Phe Lys Arg Leu Ile Asp Lys Phe Arg Leu Leu Met Ser Asn Gly
 145 150 155 160

Glu Phe Phe Pro Trp Asn Ile His Ile Ile Arg Asn Tyr Val Leu Ser
 165 170 175

Phe Ile Trp Ser Ala Phe Ala Ser Thr Gly Val Val Leu Pro Ala Val
 180 185 190

Ser Leu Asp Thr Ile Phe Cys Ser Phe Thr Ser Asn Leu Cys Ala Phe
 195 200 205

Phe Lys Ile Ala Gln Tyr Lys Val Val Arg Phe Lys Gly Gly Ser Leu
 210 215 220

Lys Glu Ser Gln Ala Thr Leu Asn Lys Val Phe Ala Leu Tyr Gln Thr
 225 230 235 240

Ser Leu Asp Met Cys Asn Asp Leu Asn Gln Cys Tyr Gln Pro Ile Ile
 245 250 255

Cys Ala Gln Phe Phe Ile Ser Ser Leu Gln Leu Cys Met Leu Gly Tyr
 260 265 270

Leu Phe Ser Ile Thr Phe Ala Gln Thr Glu Gly Val Tyr Tyr Ala Ser
 275 280 285

Phe Ile Ala Thr Ile Ile Ile Gln Ala Tyr Ile Tyr Cys Tyr Cys Gly
 290 295 300

Glu Asn Leu Lys Thr Glu Ser Ala Ser Phe Glu Trp Ala Ile Tyr Asp
 305 310 315 320

Ser Pro Trp His Glu Ser Leu Gly Ala Gly Gly Ala Ser Thr Ser Ile
 325 330 335

Cys Arg Ser Leu Leu Ile Ser Met Met Arg Ala His Arg Gly Phe Arg
 340 345 350

Ile Thr Gly Tyr Phe Phe Glu Ala Asn Met Glu Ala Phe Ser Ser Ile
 355 360 365

